ICF-A10L/A15L

SERVICE MANUAL

AEP Model

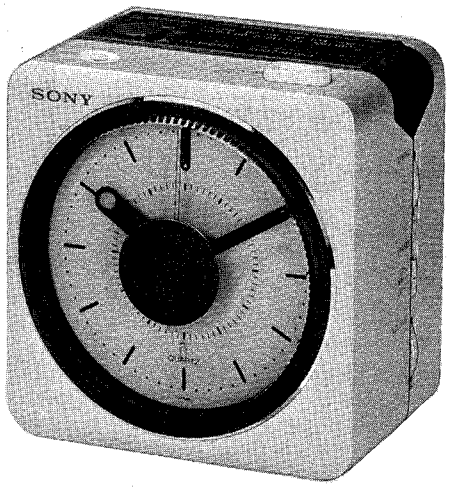


photo: pink type

SPECIFICATIONS

Frequency range	FM: 88 – 108 MHz MW: 530 – 1,605 kHz LW: 150 – 255 kHz
Antennas	FM: Wire antenna MW/LW: Built-in ferrite bar antenna
Speaker	5.7 cm (2 inches) dia. 8 ohms
Power output	120 mW
Battery life	

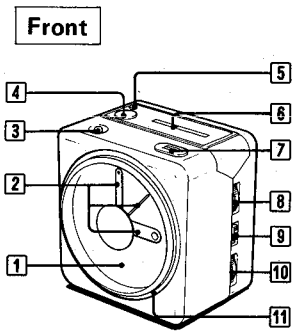
Batteries	Radio	Clock
Size AA (IEC, R6)	Approx. 20 hours	Approx. one year

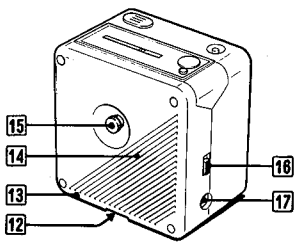
Power requirements	Radio: 3 V dc, two size AA (IEC, R6) batteries DC IN 3 V jack accepts: ICF-A10L: Sony AC-D2 AC power adaptor (optional) ICF-A15L: Sony AC-D2 AC power adaptor (supplied) Clock: 1.5 V dc, one size AA (IEC, R6) battery
Alarm time deviation	±5 minutes
Dimensions	Approx. 112 × 119.5 × 84 mm (w/h/d) (4½ × 4¾ × 3⅜ inches) incl. projecting parts and controls
Weight	Approx. 470 g (1 lb 5.76 oz) incl. batteries

FEATURES

- High quality FM/MW/LW radio combined with an alarm clock and sleep timer.
- Choice of awakening to radio or melody alarm.
- Easy alarm preset with a dial.
- Easy-to-read simple analog clock dial plate.

PARTS IDENTIFICATION





1 Dial plate
2 Hands
3 LIGHT button
4 RADIO ON/OFF button
5 SLEEP TIMER button
6 Dial scale
7 ALARM button
8 TUNING knob
9 BAND selector
10 VOLUME control
11 Alarm set dial
12 Battery compartment (bottom)
13 WIRE ANTENNA jack
14 Speaker
15 TIME SET knob
16 ALARM MODE (RADIO/MELODY) selector
17 DC IN 3 V jack

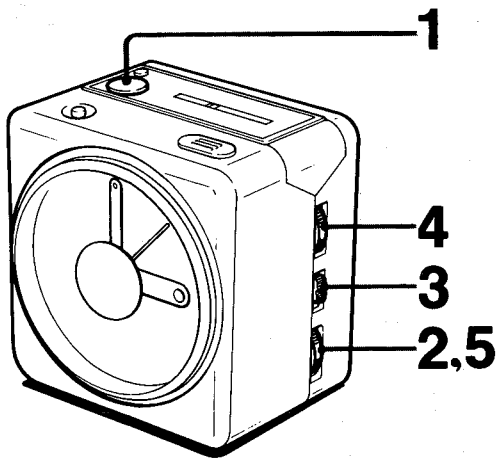
FM/MW/LW 3-BAND ANALOG CLOCK RADIO

SONY®

MICROFILM

TR

RADIO OPERATION



1 Depress the RADIO ON/OFF button.

2 Turn counterclockwise a little to get sound.

3 Select the desired band.

4 Tune in the desired station.

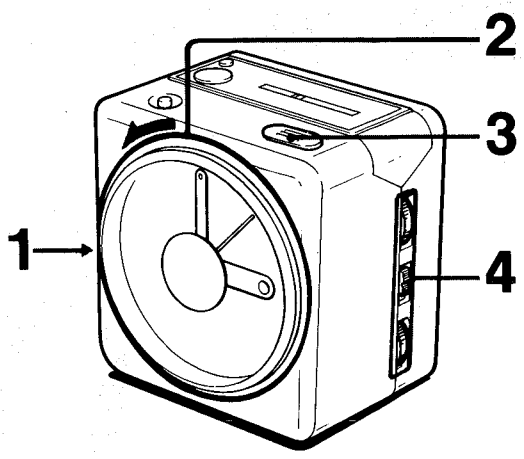
5 Adjust the volume to your preference.

To turn off the radio, press the RADIO ON/OFF button.

FOR STABLE RECEPTION

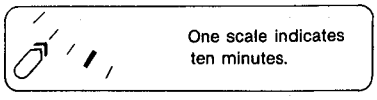
For FM reception, connect the FM wire antenna (supplied) to the WIRE ANTENNA jack and extend it so that the sensitivity will be increased.
For AM reception, the built-in ferrite bar antenna activates. Move the unit horizontally for optimum reception.

HOW TO SET THE ALARM (RADIO OR MELODY)



1 Select the alarm sound.

2 Turn counterclockwise to adjust the alarm time.



If you adjust the alarm time by turning clockwise, the alarm might start ringing earlier than the time set.

3 Set to ON.

4 To awake to the radio, tune in the desired station and adjust the volume, then set the RADIO ON/OFF button to OFF.

The alarm will come on automatically at the preset time and shut itself off automatically after approx. 50 minutes.

To turn off the alarm sound within 50 minutes, depress the ALARM button.

HOW TO USE THE SLEEP TIMER

1 Tune in the desired station and adjust the volume.

2 Press the RADIO ON/OFF button to OFF.

3 Press the SLEEP TIMER button.
The radio will be turned on and turned itself off automatically after approx. one hour.

To turn off the radio before the preset time (one hour), press the SLEEP TIMER button.

Other Convenient Uses
Using the sleep timer after setting the alarm, you can fall asleep to music, knowing the radio will turn itself off after approx. one hour and you will be awakened by the alarm at the desired preset time.
In this case, be sure to set the ALARM MODE selector to RADIO or MELODY after setting the alarm and the sleep timer.
For details and notes on each operation, refer to the specific section.

ICF-A10L/A15L

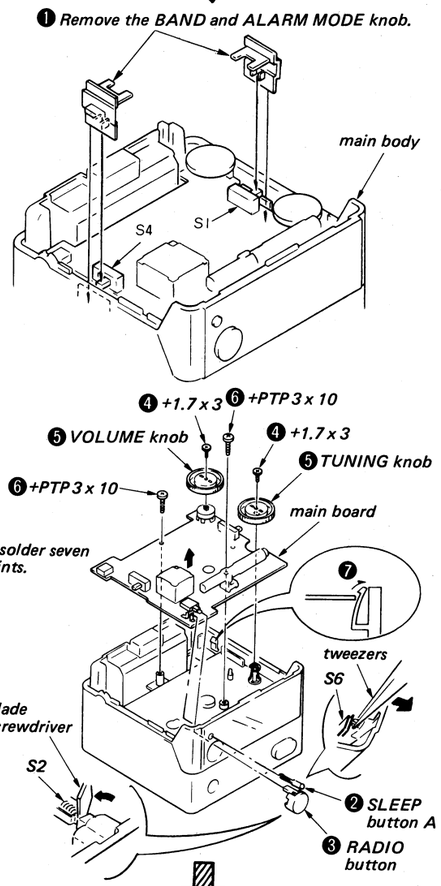
1. DISASSEMBLY

• Follow the disassembly procedure in the numerical order given.

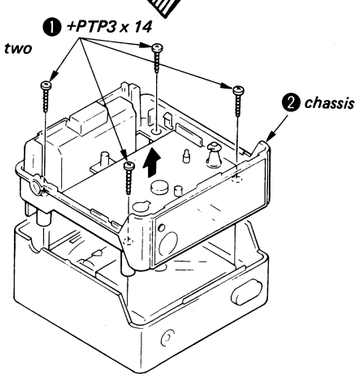
REAR CASE

1. Remove the battery case lid.
2. Pull out the TIME SET knob at the rear side. (Confirm that an idler oil ring is attached to the TIME SET knob when pulling it out.)
3. Remove two screws (BTP3 x 12) at the rear side of the rear case.
4. Remove the rear case.

MAIN BOARD

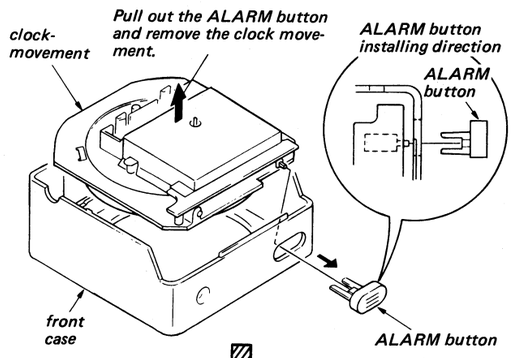


CHASSIS

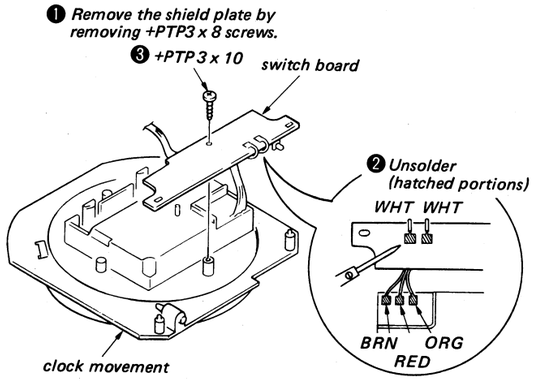


CHASSIS

CLOCK MOVEMENT

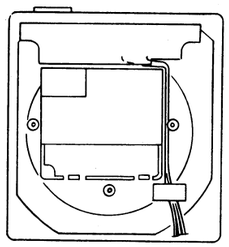


SWITCH BOARD



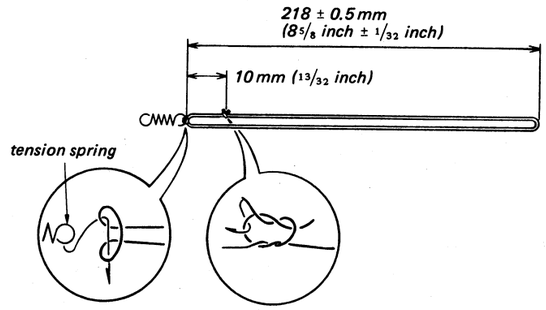
***Note on assembling**

Arrange lead wires from the switch board as shown below.

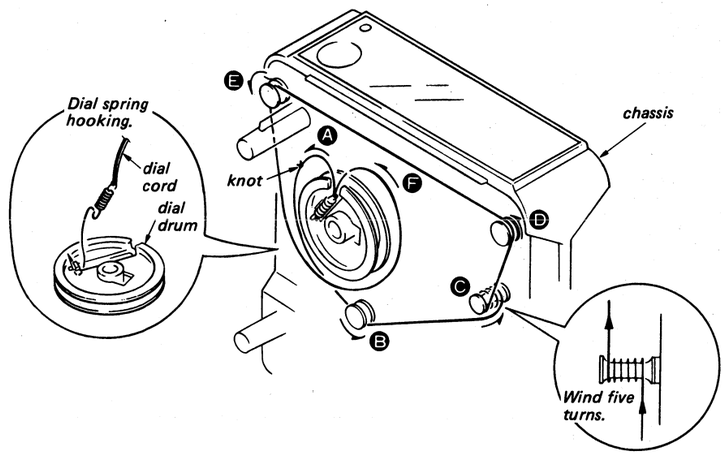


2. DIAL CORD STRINGING

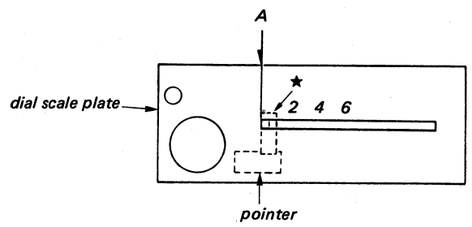
1. Preparation



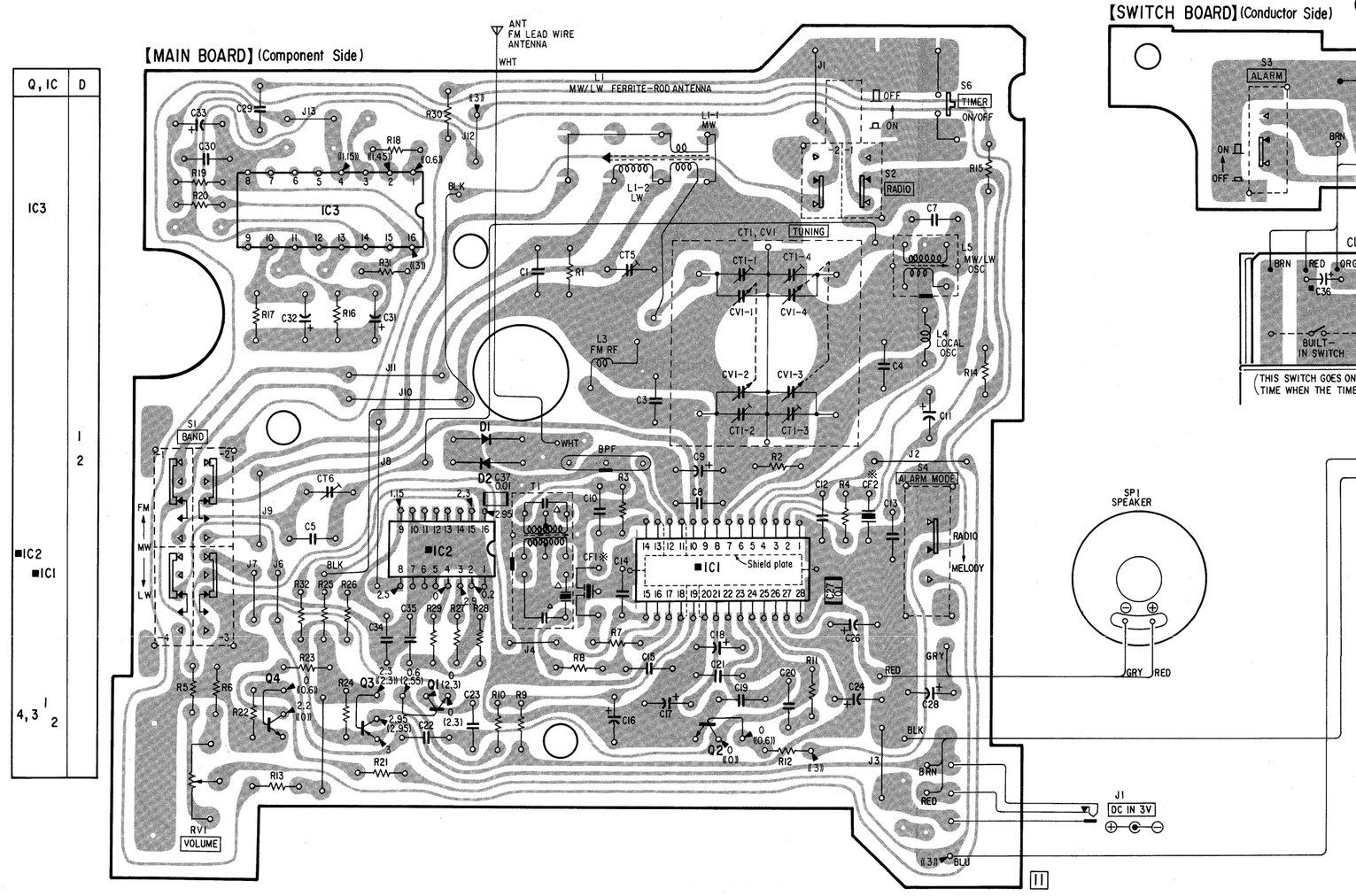
2. Stringing
   1) Turn the dial drum fully counterclockwise.
   2) Hook the dial cord in the alphabetical order given.

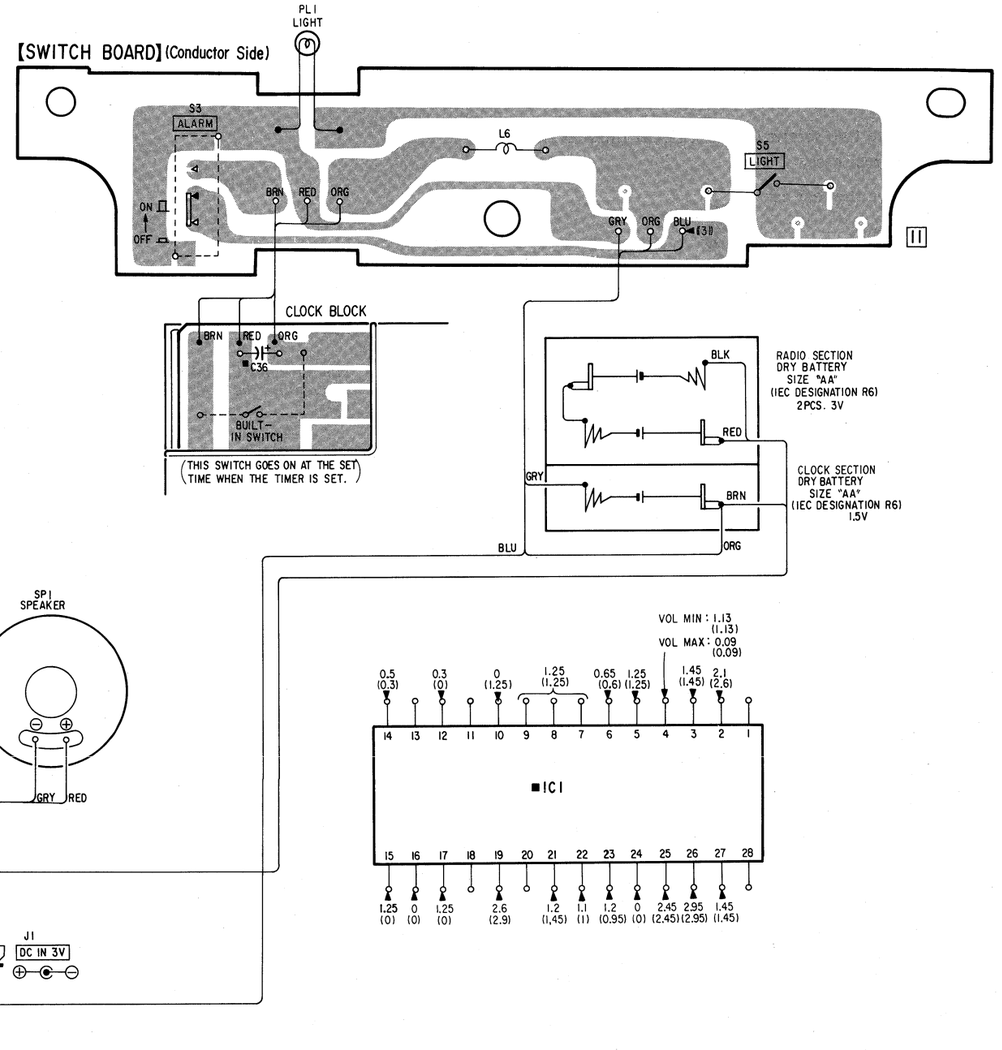


3. Dial Pointer Installation
   1) Turn the dial drum fully counterclockwise.
   2) Install the dial pointer (★ marked portion) to the rear side of the scale plate on the chassis.
   3) Fit the left side of the pointer to the left side of the dial scale.

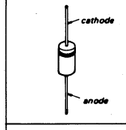
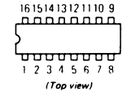
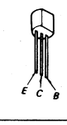
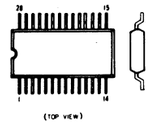
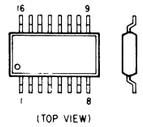


3. MOUNTING DIAGRAM





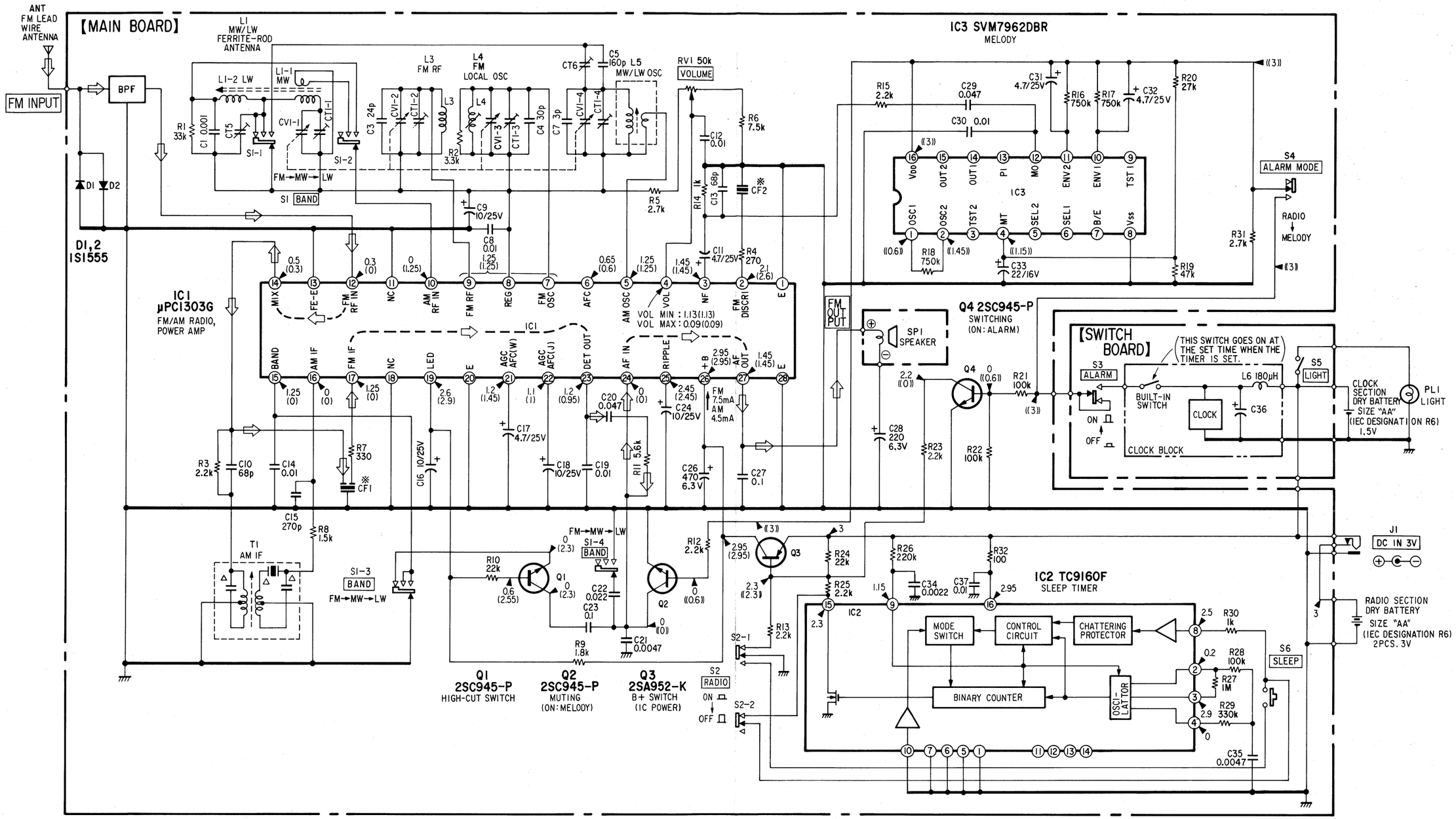
- **Semiconductor Lead Layouts.**

1S1555 	**SVM7962DBR** 	**2SC945-P** 
μPC1303G 	**TC9160F** 	**2SA952**

Note:

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- [■]— : indicates side identified with part number.

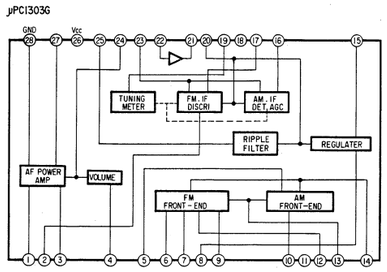
4. SCHEMATIC DIAGRAM



Note:

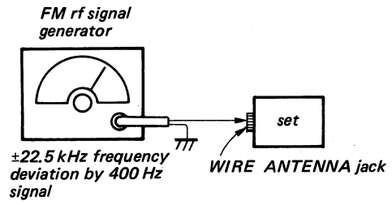
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ⇨ : signal path.
- △ : internal component.
- ※ : When replacing ceramic filter CF1 or CF2, replace them at the same time.
- Power voltage is 3 V and fed with regulated DC power supply from battery terminal.
  Voltages are dc with respect to ground in detuned mode with a VOM (DC 50kΩ/V).
  Volatage variations may be noted due to normal production tolerances.

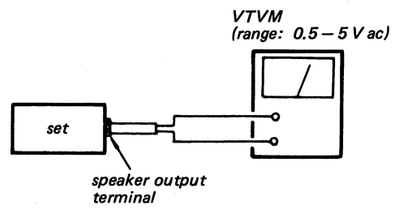
μPC1303G



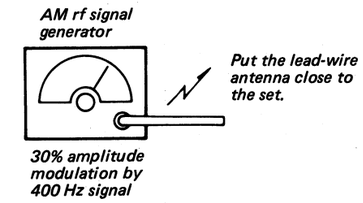
5. ELECTRICAL ADJUSTMENT

FM





MW/LW



• Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

–MAIN BOARD–

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
160 kHz	L1–2
240 kHz	CT5

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
145 kHz	CT6

AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM.	
450 kHz	T1

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT1–1	1,400 kHz
L1–1	620 kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	520 kHz
CT1–4	1,650 kHz

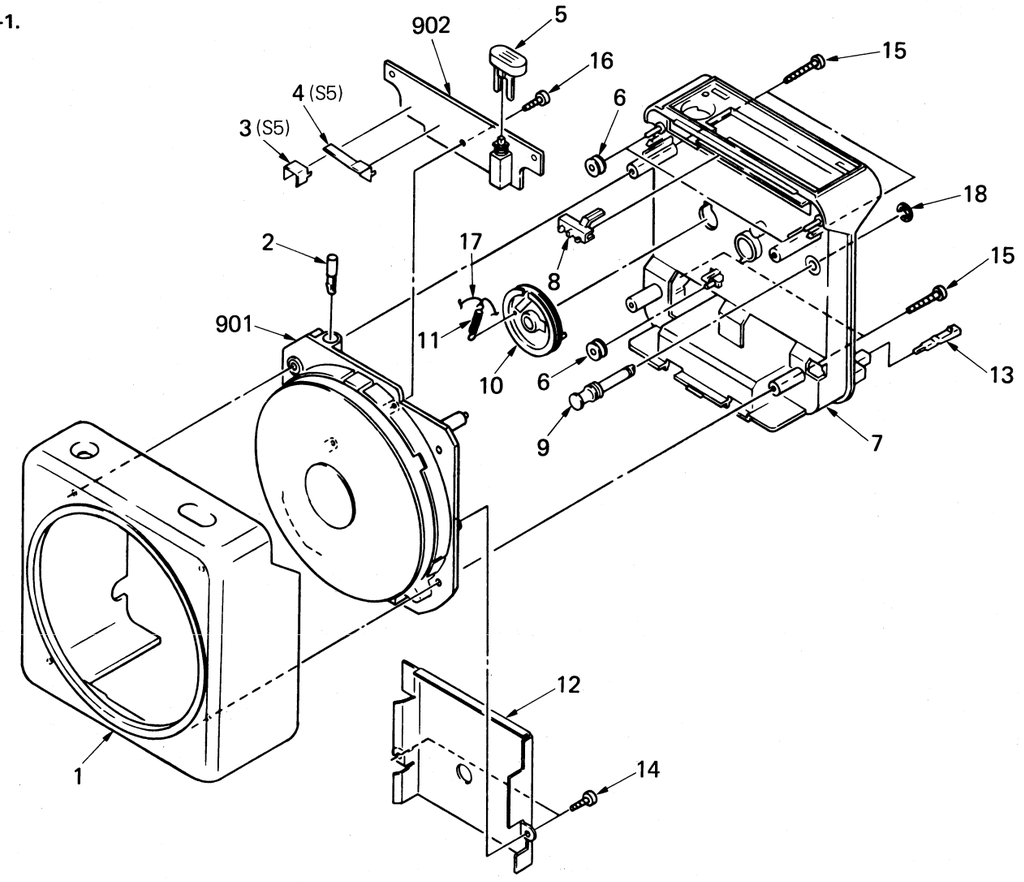
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	87.35 MHz
CT1–3	108 MHz

L3	CT1–2
87.35 MHz	108 MHz
Adjust for a maximum reading on VTVM.	
FM TRACKING ADJUSTMENT	

6. EXPLODED VIEWS AND PARTS LIST

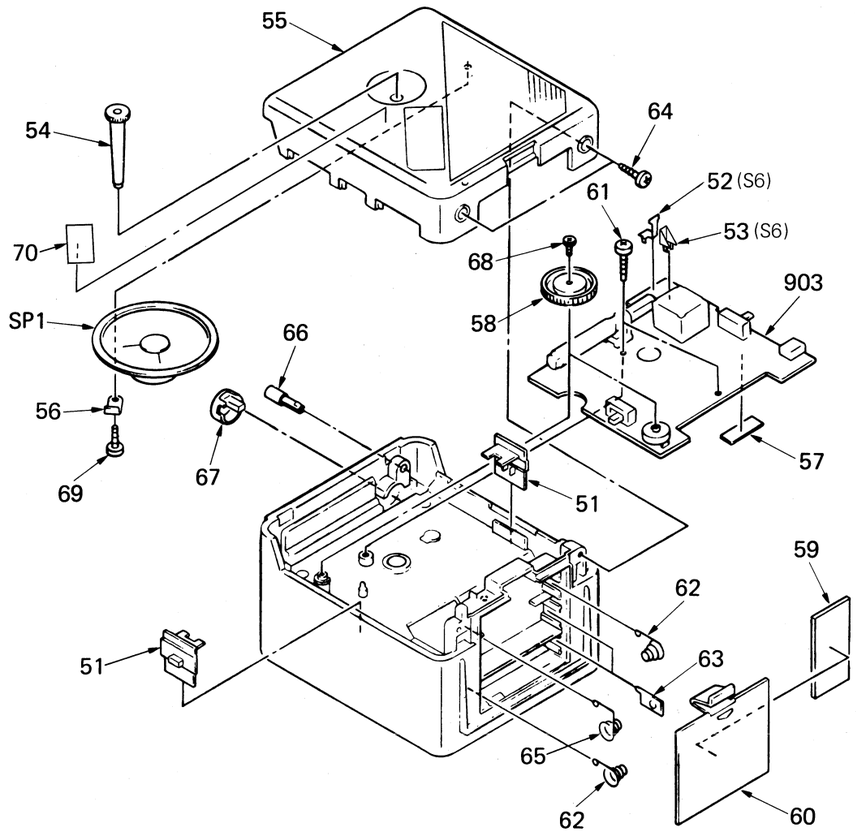
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

6-1.



No.	Part No.	Description	Remarks
1	X-3896-519-1	(RED).....CASE ASSY, FRONT	
	X-3896-520-1	(PINK).....CASE ASSY, FRONT	
	X-3896-521-1	(BLUE).....CASE ASSY, FRONT	
	X-3896-522-1	(GRAY).....CASE ASSY, FRONT	
	X-3896-523-1	(WHITE).....CASE ASSY, FRONT	
	X-3896-524-1	(BLACK).....CASE ASSY, FRONT	
2	3-896-504-21	BUTTON (A), LIGHT	
3	3-896-516-01	PLATE (B), CONTACT, LIGHT } (S5)	
4	3-896-517-01	PLATE (C), CONTACT, LIGHT }	
5	3-896-502-01	(BLACK,GRAY)...BUTTON, ALARM	
	3-896-502-11	(WHITE).....BUTTON, ALARM	
	3-896-502-21	(RED).....BUTTON, ALARM	
	3-896-502-41	(PINK).....BUTTON, ALARM	
	3-896-502-51	(BLUE).....BUTTON, ALARM	
6	3-304-108-00	PULLEY	
7	X-3896-525-1	(WHITE,BLUE,PINK)...CHASSIS ASSY	
	X-3896-526-1	(BLACK,GRAY,RED)....CHASSIS ASSY	
8	3-896-507-01	POINTER	
9	3-896-518-01	SHAFT, TUNING	
10	*3-896-509-01	DRUM, VC	
11	3-891-903-00	SPRING, TENSION	
12	*3-896-519-01	PLATE, SHIELD	
13	*X-3896-518-1	(AEP)....CONNECTION ASSY, ANTENNA	
14	7-685-146-14	SCREW +P 3X8 TYPE2 NON-SLIT	
15	7-685-149-11	SCREW +P 3X14 TYPE2 NON-SLIT	
16	7-685-147-14	SCREW +P 3X10 TYPE2 NON-SLIT	
17	9-911-825-52	DIAL CORD 0.3	
18	7-624-106-04	STOP RING 3.0, TYPE -E	
901	1-548-144-11	(BLACK,GRAY)...CLOCK MOVEMENT	
	1-548-144-21	(WHITE).....CLOCK MOVEMENT	
	1-548-144-31	(RED).....CLOCK MOVEMENT	
	1-548-144-61	(PINK,BLUE)....CLOCK MOVEMENT	
902	*1-619-673-11	PC BOARD, SWITCH	

6-2.



No.	Part No.	Description	Remarks
51	3-896-514-01	(BLACK,GRAY) ....KNOB, SLIDE, BAND, ALARM MODE	
	3-896-514-11	(WHITE)...KNOB, SLIDE, BAND, ALARM MODE	
	3-896-514-21	(RED).....KNOB, SLIDE, BAND, ALARM MODE	
	3-896-514-41	(PINK)....KNOB, SLIDE, BAND, ALARM MODE	
	3-896-514-51	(BLUE)....KNOB, SLIDE, BAND, ALARM MODE	
52	3-896-515-01	PLATE (A), CONTACT, SLEEP	(S6)
53	3-896-544-01	PLATE (D), CONTACT, SLEEP	(S6)
54	3-896-508-01	(BLACK,GRAY)...KNOB, TIME SET	
	3-896-508-11	(WHITE).....KNOB, TIME SET	
	3-896-508-21	(RED).....KNOB, TIME SET	
	3-896-508-41	(PINK).....KNOB, TIME SET	
	3-896-508-52	(BLUE).....KNOB, TIME SET	
55	3-896-557-01	(A15L:BLACK)...CASE (REAR)	
	3-896-557-11	(A15L:WHITE)...CASE (REAR)	
	3-896-557-31	(A15L:BLUE)....CASE (REAR)	
	3-896-557-41	(A15L:PINK)....CASE (REAR)	
	3-896-557-51	(A15L:GRAY)....CASE (REAR)	
	3-896-571-01	(A10L:BLACK)...CASE (REAR)	
	3-896-571-11	(A10L:WHITE)...CASE (REAR)	
	3-896-571-21	(A10L:RED).....CASE (REAR)	
	3-896-571-31	(A10L:BLUE)....CASE (REAR)	
	3-896-571-41	(A10L:PINK)....CASE (REAR)	
	3-896-571-51	(A10L:GRAY)....CASE (REAR)	

No.	Part No.	Description	Remarks
56	*3-889-114-00	CLAW, SPEAKER	
57	*3-892-935-01	PLATE, GROUND	
58	3-896-505-01	(BLACK,GRAY)..KNOB, ROTARY, TUNING, VOLUME	
	3-896-505-11	(WHITE).....KNOB, ROTARY, TUNING, VOLUME	
	3-896-505-21	(RED).....KNOB, ROTARY, TUNING, VOLUME	
	3-896-505-41	(PINK).....KNOB, ROTARY, TUNING, VOLUME	
	3-896-505-51	(BLUE).....KNOB, ROTARY, TUNING, VOLUME	
59	9-911-815-01	CUSHION (SIDE LEAD RETAINER)(t=3)	
60	3-896-501-01	(BLACK,GRAY,RED)....LID, BATTERY CASE	
	3-896-501-11	(WHITE,PINK,BLUE)...LID, BATTERY CASE	
61	7-685-147-14	SCREW +P 3X10 TYPE2 NON-SLIT	
62	3-896-511-01	SPRING	
63	3-896-510-01	TERMINAL, PLUS	
64	7-685-548-14	SCREW +BTP 3X12 TYPE2 N-S	
65	2-370-903-00	SPRING (A)	
66	3-896-504-01	(BLACK,GRAY,RED)....BUTTON (A), SLEEP	
	3-896-504-11	(WHITE,PINK,BLUE)...BUTTON (A), SLEEP	
67	3-896-503-01	(BLACK,GRAY,RED)....BUTTON, RADIO	
	3-896-503-11	(WHITE,PINK,BLUE)...BUTTON, RADIO	
68	3-880-990-00	SCREW (1.7X3), FLAT, (+) SPECIAL	
69	7-685-144-11	SCREW +P 3X5 TYPE2 NON-SLIT	
70	*3-896-568-01	(G-AEP)...MARK, DBP	
	4-310-379-00	(A10L)....LABEL, NEMKO	
903	*A-3615-126-A	(AEP).....PC BOARD ASSY, MAIN	
	*A-3615-128-A	(G-AEP)...PC BOARD ASSY, MAIN	
SP1	1-503-616-11	SPEAKER	

7. ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	1-548-144-11	(BLACK,GRAY)...CLOCK MOVEMENT			
	1-548-144-21	(WHITE).....CLOCK MOVEMENT			
	1-548-144-31	(RED).....CLOCK MOVEMENT			
	1-548-144-61	(PINK,BLUE)....CLOCK MOVEMENT			
902	*1-619-673-11	PC BOARD, SWITCH			
903	*A-3615-126-A	(AEP).....PC BOARD ASSY, MAIN			
	*A-3615-128-A	(G-AEP)...PC BOARD ASSY, MAIN			
BPF	1-235-171-00	FILTER, BAND PASS			
C1	1-102-074-00	CERAMIC	0.001MF	10%	50V
C3	1-102-960-00	CERAMIC	24PF	5%	50V
C4	1-102-644-21	CERAMIC	30PF	5%	50V
C5	1-107-090-00	MICA	160PF	5%	50V
C7	1-162-681-11	CERAMIC	3PF	0.25PF	50V
C8	1-101-004-00	CERAMIC	0.01MF		50V
C9	1-123-356-00	ELECT	10MF	20%	25V
C10	1-101-888-00	CERAMIC	68PF	10%	50V
C11	1-123-369-00	ELECT	4.7MF	20%	25V
C12	1-101-004-00	CERAMIC	0.01MF		50V
C13	1-101-888-00	CERAMIC	68PF	10%	50V
C14	1-102-129-00	CERAMIC	0.01MF	10%	50V
C15	1-102-980-00	CERAMIC	270PF	5%	50V
C16	1-123-356-00	ELECT	10MF	20%	25V
C17	1-123-369-00	ELECT	4.7MF	20%	25V
C18	1-123-356-00	ELECT	10MF	20%	25V
C19	1-161-013-00	CERAMIC	0.01MF	20%	25V
C20	1-161-059-00	CERAMIC	0.047MF	20%	25V
C21	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C22	1-161-055-00	CERAMIC	0.022MF	20%	25V
C23	1-161-974-00	CERAMIC	0.1MF	20%	16V
C24	1-123-356-00	ELECT	10MF	20%	25V
C26	1-124-135-00	ELECT	470MF	20%	6.3V
C27	1-162-623-11	CERAMIC CHIP	0.1MF	10%	25V
C28	1-123-308-00	ELECT	220MF	20%	6.3V
C29	1-161-059-00	CERAMIC	0.047MF	20%	25V
C30	1-101-004-00	CERAMIC	0.01MF		50V
C31	1-123-369-00	ELECT	4.7MF	20%	25V
C32	1-123-369-00	ELECT	4.7MF	20%	25V
C33	1-123-330-00	ELECT	22MF	20%	16V
C34	1-101-002-00	CERAMIC	0.0022MF		50V
C35	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C37	1-163-021-00	CERAMIC CHIP	0.01MF		50V
CF1, CF2	1-567-538-71	FILTER, CERAMIC			
CT1, CV1	1-151-478-21	CAP, TUNING, POLYETHYLENE			

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
CT5	1-141-227-00	CAP, VAR, TRIMMER			
CT6	1-141-227-00	CAP, VAR, TRIMMER			
D1	8-719-815-55	DIODE 1S1555			
D2	8-719-815-55	DIODE 1S1555			
IC1	1-807-018-11	IC UPC1303G			
IC2	8-759-203-88	IC TC9160F			
IC3	1-807-511-11	IC SVM7962DBR			
J1	1-507-951-11	JACK, EXTERNAL POWER (DC IN 3V)			
L1	1-402-230-11	ANTENNA, FERRITE-ROD (LW/MW)			
L3	*1-422-293-11	(G-AEP)...COIL, AIR-CORE (FM RF)			
L3	*1-422-300-11	(AEP).....COIL, AIR-CORE (FM RF)			
L4	*1-422-294-11	COIL, AIR-CORE (FM LOCAL OSC)			
L5	1-406-028-00	COIL, OSC (MW/LW)			
L6	1-408-578-00	MICRO INDUCTOR 180UH			
PL1	1-518-595-11	LAMP, PILOT			
Q1	8-729-194-57	TRANSISTOR 2SC945-P			
Q2	8-729-194-57	TRANSISTOR 2SC945-P			
Q3	8-729-195-23	TRANSISTOR 2SA952			
Q4	8-729-194-57	TRANSISTOR 2SC945-P			
R1	1-249-435-11	CARBON	33K	5%	1/6W
R2	1-249-423-11	CARBON	3.3K	5%	1/6W
R3	1-247-839-00	CARBON	2.2K	5%	1/6W
R4	1-247-817-00	CARBON	270	5%	1/6W
R5	1-249-422-11	CARBON	2.7K	5%	1/6W
R6	1-247-852-00	CARBON	7.5K	5%	1/6W
R7	1-247-819-00	CARBON	330	5%	1/6W
R8	1-249-419-11	CARBON	1.5K	5%	1/6W
R9	1-249-420-11	CARBON	1.8K	5%	1/6W
R10	1-249-433-11	CARBON	22K	5%	1/6W
R11	1-247-849-00	CARBON	5.6K	5%	1/6W
R12	1-247-839-00	CARBON	2.2K	5%	1/6W
R13	1-247-839-00	CARBON	2.2K	5%	1/6W
R14	1-249-417-11	CARBON	1K	5%	1/6W
R15	1-247-839-00	CARBON	2.2K	5%	1/6W
R16	1-247-900-00	CARBON	750K	5%	1/6W
R17	1-247-900-00	CARBON	750K	5%	1/6W
R18	1-247-900-00	CARBON	750K	5%	1/6W
R19	1-249-437-11	CARBON	47K	5%	1/6W
R20	1-249-434-11	CARBON	27K	5%	1/6W
R21	1-249-441-11	CARBON	100K	5%	1/6W
R22	1-249-441-11	CARBON	100K	5%	1/6W
R23	1-247-839-00	CARBON	2.2K	5%	1/6W
R24	1-249-433-11	CARBON	22K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R25	1-247-839-00	CARBON	2.2K	5%	1/6W
R26	1-247-887-00	CARBON	220K	5%	1/6W
R27	1-247-903-00	CARBON	1M	5%	1/6W
R28	1-249-441-11	CARBON	100K	5%	1/6W
R29	1-247-891-00	CARBON	330K	5%	1/6W
R30	1-249-417-11	CARBON	1K	5%	1/6W
R31	1-249-422-11	CARBON	2.7K	5%	1/6W
R32	1-249-405-11	CARBON	100	5%	1/6W
RV1	1-230-554-21	RES, VAR, CARBON 50K			
S1	1-553-890-00	SWITCH, SLIDE (BAND)			
S2	1-570-601-11	SWITCH, PUSH (1 KEY)(RADIO)			
S3	1-570-575-11	SWITCH, PUSH (1 KEY)(ALARM)			
S4	1-552-370-00	SWITCH, SLIDE (ALARM MODE)			
S5	3-896-516-01	PLATE (B), CONTACT, LIGHT			
	3-896-517-01	PLATE (C), CONTACT, LIGHT			
S6	3-896-515-01	PLATE (A), CONTACT, SLEEP			
	3-896-544-01	PLATE (D), CONTACT, SLEEP			
SP1	1-503-616-11	SPEAKER			
T1	1-403-163-00	CERAMIC FILTER (AM IF)			

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-463-743-11	(A15L)...ADAPTOR, AC (AC-300)
3-703-910-01	(BLACK)...LABEL, COLOR
3-703-913-01	(GRAY)....LABEL, COLOR
3-703-916-01	(BLUE)....LABEL, COLOR
3-703-919-01	(PINK)....LABEL, COLOR
3-703-920-01	(RED).....LABEL, COLOR
3-703-923-01	(WHITE)...LABEL, COLOR
*3-764-494-01	(G-AEP)...INSTRUCTION
3-896-529-01	CUSHION
3-896-559-01	(A15L)...CUSHION, ADAPTOR
3-896-560-01	(A15L)...INDIVIDUAL CARTON
3-896-574-01	(A10L)...INDIVIDUAL CARTON
*3-896-568-01	(G-AEP)...MARK, DBP
3-896-572-01	BAG, POLYETHYLENE (FOR SET)
3-990-055-11	(A10L)...MANUAL, INSTRUCTION
3-990-055-31	(A15L)...MANUAL, INSTRUCTION
X-3896-510-1	(AEP)...ANTENNA ASSY, WIRE

9-952-364-11

Sony Corporation

English
8610630-1
Printed in Japan
©1986